REMARKS

The present application concerns the use of an associative memory to create a data correlation and analysis tool with capabilities that had not been possible with other systems available at the time. Rather than conducting searches by reading through a continuous file or by accessing particular addresses, an associative memory is used to make memory access much easier and faster. The application states:

> This associative memory then allows access to associative process variables 94, the new variables 96 as well as video and audio frames 92 by content as opposed to by physical address. Thus, analysis of the associated information is easily accessible.

(Application, p. 9, l. 13-15)

Characteristics of an associative memory were known at the time. According to Mano, M., COMPUTER SYSTEM ARCHITECTURE, 1982, p. 489 (copy of section on associative memory attached), "This type of memory is accessed simultaneously and in parallel on the basis of data content rather than by specific address or location." Similarly, Baer, J., COMPUTER SYSTEMS ARCHITECTURE, 1980, p. 262 (copy of section on associative memory attached) describes an associative memory ("AM") with, "Thus, instead of answering queries of the form, "What is the contents location LOC?", an AM responds to questions of the form, "Is there a location containing item XYZ?". In order to do this efficiently, all locations must be searched in parallel." By permitting simultaneous and parallel searching the associative memories operate efficiently. In a single clock cycle, an entire associative memory can be searched for bits of content matching the bits of content of the query.

The operation of an associative memory is in sharp contrast to searching for information in a continuous file. While requested data may eventually be found in a continuous file, the file or at least an index of the file must be read through to locate the requested content. The reading operation takes place serially, not in parallel, as is characteristic of an associative memory. Excerpts from the above mentioned books are provided herewith to provide a fuller understanding of associative memories.

Claims 70, 74 and 79 were rejected over Nickerson in view of Rector and Bogart. Claim 70 has been amended to be explicit regarding the operation of an associative mapping. As was well known in the art, an associative memory can be advantageously searched simultaneously and in parallel. This feature of associative memories has now been added into the claims to clearly recite a patentable distinction over the prior art. Given this distinction, it is no longer necessary to rely upon the ability to do multichannel mapping. The multichannel limitation has been removed from claim 70 and into a new claim 106.

Nickerson does not teach storing the stimulus stream as a digital signal correlated with an associative mapping. Nor does Nickerson teach a user interface that allows an operator to playback time slices of the stimulus stream on the interface. The examiner turns to Rector for an associative mapping broadly defined. As amended, however, the so-called table of Rector does not correspond to an associative mapping that "can be searched simultaneously and in parallel to encompass correlated data for every time slice in the table." The examiner explains Rector as a "file format [that] can be easily parsed by reading headers." (Office Action, p. 3) He goes on, "the data blocks themselves do not have to be read until the appropriate header is found." The delay imposed by looking through the file for a header and then reading through a portion of the file is contrary to Applicants' invention. The associative mapping of the invention is searched simultaneously and in parallel. Taking advantage of such a memory arrangement is not taught or suggested by any of Nickerson, Rector or Bogart. For these reasons, claims 70, 74 and 79 should be allowed.

Claims 80-86, 89, 92, 93 and 95 were rejected over Nickerson in view of Rector. Claim 80 has been amended to require that "an entire row or column of variables in the associative mapping can be searched by content simultaneously and in parallel to retrieve video frames of the stimulus signal responsive to the search." Nickerson fails to disclose digital storage of time slices of a stimulus signal in an organized structure in which the claimed parallel searching by content can take place. Rector fails to satisfy the deficiencies of Nickerson. While the examiner has read an organized structure onto the continuous IFFPHYS file storage of Rector, such a file is searched by reading through the

file or an index to the file. There is absolutely no suggestion in Rector of digital storage that permits searching through an entire row or column of the memory by content simultaneously and in parallel. There is no suggestion of such an associative memory in a system such as that taught by Applicants for correlating and analyzing data in conjunction with one or more video stimulus streams. For these reasons, claim 80 and all claims depending therefrom should be allowed.

Claim 90 has been rejected over Nickerson and Rector and the definition of "interpolation." Claim 91 has been rejected over Nickerson and Rector and the definition of "extrapolate." Claims 90 and 91 depend from claim 80 and should be allowed for the reasons recited above.

Claims 97 and 103-105 were rejected over Nickerson in view of Rector and Aviv. Claim 97 has been amended in view of discussions in the examiner interview to more clearly recite how a summary video is created in accordance with Applicants' invention. Neither Nickerson nor Rector disclose or suggest methods for making a summary video of non-contiguous video segments identified by search criteria. With regard to Aviv, the examiner notes, "When a sensor anomaly is detected, video data is automatically stored…" (Office Action, p. 14) Aviv thus relates to the sampling rate of cameras in real time. In Aviv, the video data is being stored at a slower or faster rate. Applicants' invention is quite distinct. Applicants' invention concerns conducting a search in an associative mapping after the video has been stored. Applicants further create a video of non-contiguous segments from the stored video responsive to the search criteria.

Claim 97 has been amended to state the invention more clearly. The claim now explicitly requires, "searching the responses or analyses of the responses in the associative mapping in accordance with the search criteria; and generating a summary video having time slices of the at least one stimulus stream responsive to the searching." While Rector may disclose search and display of a segment from its continuous file, there is no suggestion of a capability of extracting a variety of segments to form a summary video. Aviv does not satisfy these deficiencies as it merely discusses storing video as it is being viewed by cameras. The ability to conduct a search with regard to a video after it has been taken and extract segments responsive to the search criteria to produce a

summary video is no where taught, suggested or disclosed in the cited art. For these reasons, applicants submit that claim 97 and all claims depending therefrom should be allowed.

Claims 98-100 were rejected over Nickerson, in view of Rector, Aviv and Leroy. Claims 101-102 were rejected over Nickerson in view of Rector, Leroy, Aviv and Cobbley. These claims all depend from claim 97 and should be allowed for the reasons recited above with respect to claim 97.

For all the foregoing reasons, Applicants submit that all of the claims presently pending in the application are allowable over the art of record and early notice to that effect is respectfully solicited.

Respectfully submitted,

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